APPENDIX VII-1

CALCULATION OF
DISCHARGED CUTTINGS COMPOSITION

Deep, Development Model Well Data
Calculation of Discharged Cuttings Composition for Two Levels of Solids Control

11% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.11 TW + [0.11 (0.2/0.47)] TW + [0.11(0.33/0.47)] TW + (fraction that is DC) TW
= 0.11 TW + 0.0468TW + 0.0772TW + 0.76601 TW

		lbs	bbls
TW =	DC/0.7660=	1,015,731	**1,442**
synthetic =	0.11 TW =	111,730	399
water =	0.0468 TW=	47,536	136
barite =	0.0772 TW =	78,414	52
cuttings =	model well size =	778,050	855

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	587	237,681
0.2% (vol) crude:	1.2	345
Total drilling fluid plus crude discharged =	**588**	238,026
Sum of synthetic plus crude =	400	**112,076**

7% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.07 TW + [0.07 (0.2/0.47)] TW + [0.07(0.33/0.47)] TW + (fraction that is DC) TW
= 0.07 TW + 0.0298TW + 0.0491TW + 0.8511 TW

		lbs	bbls
TW =	DC/0.8511=	914,170	**1,191**
synthetic =	0.07 TW =	63,992	229
water =	0.0298 TW=	27,242	78
barite =	0.0491 TW =	44,886	30
cuttings =	model well size =	778,050	855

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	336	136,120
0.2% (vol) crude:	0.7	198
Total drilling fluid plus crude discharged =	**337**	136,318
Sum of synthetic plus crude =	229	**64,190**

Deep, Exploratory Model Well Data
Calculation of Discharged Cuttings Composition for Two Levels of Solids Control

11% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.11 TW + [0.11 (0.2/0.47)] TW + [0.11(0.33/0.47)] TW + (fraction that is DC) TW
= 0.11 TW + 0.0468TW + 0.0772TW + 0.7660 TW

		lbs	bbls
TW =	DC/0.7660=	2,258,368	**3,206**
synthetic =	0.11 TW =	248,420	887
water =	0.0468 TW=	105,692	302
barite =	0.0772 TW =	174,346	116
cuttings =	model well size =	1,729,910	1,901

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	1,305	528,458
0.2% (vol) crude:	2.6	767
Total drilling fluid plus crude discharged =	**1,308**	529,225
Sum of synthetic plus crude =	890	**249,188**

7% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.07 TW + [0.07 (0.2/0.47)] TW + [0.07(0.33/0.47)] TW + (fraction that is DC) TW
= 0.07 TW + 0.0298TW + 0.0491TW + 0.8511 TW

		lbs	bbls
TW =	DC/0.8511=	2,032,558	**2,648**
synthetic =	0.07 TW =	142,279	508
water =	0.0298 TW=	60,570	173
barite =	0.0491 TW =	99,799	66
cuttings =	model well size =	1,729,910	1,901

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	747	302,648
0.2% (vol) crude:	1.5	440
Total drilling fluid plus crude discharged =	**749**	303,087
Sum of synthetic plus crude =	510	**142,719**

Shallow, Development Model Well Data
Calculation of Discharged Cuttings Composition for Two Levels of Solids Control

11% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.11 TW + [0.11 (0.2/0.47)] TW + [0.11(0.33/0.47)] TW + (fraction that is DC) TW
= 0.11 TW + 0.0468TW + 0.0772TW + 0.7660 TW

		lbs	bbls
TW =	DC/0.7660=	671,214	**953**
synthetic =	0.11 TW =	73,834	264
water =	0.0468 TW=	31,413	90
barite =	0.0772 TW =	51,818	34
cuttings =	model well size =	514,150	565

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	388	157,064
0.2% (vol) crude:	0.8	228
Total drilling fluid plus crude discharged =	**389**	157,292
Sum of synthetic plus crude =	264	**74,062**

7% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.07TW + [0.07 (0.2/0.47)] TW + [0.07(0.33/0.47)] TW + (fraction that is DC) TW
= 0.07 TW + 0.0298TW + 0.0491TW + 0.8511 TW

		lbs	bbls
TW =	DC/0.8511=	604,101	**787**
synthetic =	0.07 TW =	42,287	151
water =	0.0298 TW=	18,002	51
barite =	0.0491 TW =	29,661	20
cuttings =	model well size =	514,150	565

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	222	89,951
0.2% (vol) crude:	0.4	131
Total drilling fluid plus crude discharged =	**223**	90,081
Sum of synthetic plus crude =	151	**42,418**

Shallow, Exploratory Model Well Data
Calculation of Discharged Cuttings Composition for Two Levels of Solids Control

11% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.11 TW + [0.11 (0.2/0.47)] TW + [0.11(0.33/0.47)] TW + (fraction that is DC) TW
= 0.11 TW + 0.0468TW + 0.0772TW + 0.7660 TW

		lbs	bbls
TW =	DC/0.7660=	1,406,580	**1,997**
synthetic =	0.11 TW =	154,724	553
water =	0.0468 TW=	65,828	188
barite =	0.0772 TW =	108,588	72
cuttings =	model well size =	1,077,440	1,184

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	813	329,140
0.2% (vol) crude:	1.6	478
Total drilling fluid plus crude discharged =	**814**	329,618
Sum of synthetic plus crude =	554	**155,202**

7% (wt) Retention of SBF on Cuttings with 0.2% (vol) Crude Contamination

Total Waste in pounds (TW) = 0.07 TW + [0.07 (0.2/0.47)] TW + [0.07(0.33/0.47)] TW + (fraction that is DC) TW
= 0.07 TW + 0.0298TW + 0.0491TW + 0.8511 TW

		lbs	bbls
TW =	DC/0.8511=	1,265,938	**1,650**
synthetic =	0.07 TW =	88,616	316
water =	0.0298 TW=	37,725	108
barite =	0.0491 TW =	62,158	41
cuttings =	model well size =	1,077,440	1,184

Adding 0.2% (vol) crude to whole mud discharged:

	bbls	lbs
Total drilling fluid discharged with cuttings =	466	188,498
0.2% (vol) crude:	0.9	274
Total drilling fluid plus crude discharged =	**466**	188,772
Sum of synthetic plus crude =	317	**88,889**